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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,789	03/07/2002	Robert J. Hennick	283-309.11	2965

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EXAMINER

KIM, AHSHIK

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

10/092,789

### Applicant(s)

HENNICK ET AL.

### Examiner

Ahshik Kim

### Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10/27/03 (Amendment).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03/07/02 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Amendment*

1. Receipt is acknowledged of the amendment filed on October 27, 2003. In the  
5 amendment, claims 8, 13, 16, and 21 were amended. Currently, claims 1-24 remain for  
examination.

### *Drawings*

2. This application was filed with informal drawings, which are acceptable for examination  
purposes only. Formal drawings will be required in response to this Office Action or when the  
10 application is allowed.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the  
basis for the rejections under this section made in this Office action:
- 15 A person shall be entitled to a patent unless –  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on  
sale in this country, more than one year prior to the date of application for patent in the United States.
- 20 4. Claims 11 and 13-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Feng  
(US 6,123,263, cited by Applicant).

Re claims 11, 13 and 16, Feng teaches an image module comprising a plurality of circuit  
boards 210, 214, 463 and 460; an image sensor in the form of two-dimensional photosensor array  
202 mounted on the circuit board 210; an optic assembly 300 for focusing target indicia onto the

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photosensor array; a support assembly 302 that are integrally installed over several circuit boards; and a plurality of light sources 463b, 464b and 412 for targeting and illumination.

Re claim 14, one of PCBs used in Feng – 463 - is a flexible printed circuit board on which targeting light sources are installed. Accordingly, PCB 210 on which photosensor resides  
5 can be a flexible one as well.

Re claims 15 and 17, the targeting components 722 and 724 direct the light from the light source to target area (col. 17, lines 14+).

Re claim 18, Feng further discloses a common optical plate 700 carrying optics for both aiming (722 and 724) and illumination assemblies (712a and 712b).

10 Re claim 19, as shown in figure 26, the illumination area is wider than the cross-haired target area.

Re claim 20, the apparatus further contains diffuser optics 712a and 712 b (col. 16, lines 28+).

15 ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

20 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the  
25 claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

- 5 7. Claims 1-10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feng (US 6,123,263, cited by the Applicant) in view of Arackellian et al. (US 5,504,367, cited by Applicant).

Re claims 1, 8, and 21, Feng teaches an optical reader imaging module (see figure 9, col. 10, lines 50+) comprising a first circuit board 210 carrying a two dimensional image sensor in  
10 the form of a photosensor array 202, a second circuit board 463 spaced forwardly of the first circuit board, a support assembly (see figure 9) interposed between the first and second circuit boards, an aiming/targeting system comprising LEDs 464a and 464b mounted on a flexible PCB 463, and a third circuit board 460 on which illuminating module 414a and 414b are mounted. The image capture device 202 is a two-dimensional photosensor array.

15 Feng fails to specifically teach or fairly suggest that a circuit board contains both image sensor and aiming LEDs mounted on the circuit board.

Arackellian teaches an optical reader and illumination system (see abstract) comprising a printed circuit board 78 on which a detector assembly 45 including a detector array 46 and imaging optics 49 and a plurality of LEDs 76 are installed (see figure 3A and 3B, col. 3, lines  
20 60+; col. 5, lines 23+).

In view of Arackellian's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to employ one PCB containing both image capturing

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system and illuminating/targeting system in order to reduce size of the apparatus. Also by consolidating various components onto one board, production cost for an apparatus can be reduced. Since Feng or Arackellian does not explicitly disclose that a certain number of circuit boards have to be used in their respective apparatus, one ordinary skill in the art can choose to use one or more PCBs with various components parts installed on them. It is the Examiner's view that number of PCB (or circuit board) used in the apparatus alone is not a patentably distinct element unless one provides basis for a certain number of PCBs used.

Re claims 2-4, 9, and 10, Feng further discloses a lens plate 700 carrying optics for both aiming (722 and 724) and illumination assemblies (712a and 712b). The optical plate 700 is disposed in abutting manner with the circuit board 460. The plate further contains diffusing optics 712a and 712b. The diffuser is composed of a group of half-circle shaped lens that are horizontally oriented. Since embodiment utilizes a convex (or positive) lens, one ordinary skill in the art can certainly use other type of lens (i.e., negative) as desired.

Re claim 5, the aiming pattern created by a targeting optics 450 creates a cross-hair pattern (see figure 26; col. 16, lines 61+) comprising horizontal lines and vertical lines.

Re claims 6 and 7, although Feng is silent on actual assembly of the component parts, as can be seen figures 11-14, the housing is equipped with grooves for PCBs and support for optical assembly, and other parts. It is the Examiner view that some parts are connected utilizing adhesives, screws, etc.

8. Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feng (US 6,123,263) in view of Salatto, Jr. et al. (US 5,420,411, "Salatto" hereinafter). The teachings of Feng have been discussed above.

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Feng fails to specifically teach or fairly suggest that the imaging module further comprises a heat sink.

Salatto teaches a laser scanning apparatus (see abstract) further comprising a heat sink 64 (col. 6, lines 50+) to reduce the temperature of the apparatus during operation.

5 In view of Salatto's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to employ notoriously well-known heat sink to the teachings of Feng in order to lower the temperature of the apparatus and extend the life of the reader. Heat sink or other temperature-lowering measure is well known in the art and widely used in the apparatus whose components generate heat. For instance, LEDs, laser light source, and other  
10 illuminating component of the scanner/optical reader generate heat during the scanning operation, which needs to be dissipated. Accordingly, installing heat sink as disclosed by Salatto would have been obvious modification, well within the ordinary skill in the art, and therefore an obvious expedient.

15

### ***Response to Arguments***

9. As indicated by the Applicant, claims were amended to correct minor informalities or inadvertent typographical errors. As further pointed out in the remarks section, Applicants argue that the claimed apparatus is patentably distinct over the cited references to Feng and Feng in view of Arackellian and Salatto.

20

Applicant's remarks are carefully considered, however, for the reasons below, it is the Examiner's view that the cited references, taken alone or in combination, teach the subject matter claimed in the instant application.

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In remarks, Applicant states, "The support assembly 302 in Feng is in fact a shroud assembly for the imaging lenses L1, L2, L3 and L4 (Fig. 14). It is mounted in the lower housing 142 (Fig. 9) and abuts a printed circuit board 460 *via* lock washer 340. However, PCB 460 is not the said printed circuit board in electrical communication with the image sensor as recited in claim 11." It is the Examiners view that the support assembly 302 is abutted on the printed circuit 210 via additional connecting/retaining support 186 and 187 (see figure 11; col. 21, lines 21+). Examiner also notes that the optical assembly 300 should be precisely aligned with photosensor array while the device is used. Considering the device is a hand-held device, the support assembly, abutted to the image capturing means, the abutting arrangement should provide mechanism such that they are always aligned. In a broader perspective, support portion 186 and 187 can be considered as part of support assembly 302.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the primary reference to Feng and the secondary reference to Arackellian and Salatto are directed to an optical reader system. Accordingly, it is the Examiner's view that a particular feature disclosed in a reference can certainly be adopted in other embodiments.

Features in question certainly need to be examined to determine obviousness. Whether to install



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LED and image sensor onto one board or on several boards is well within one ordinary skill in the art.

Applicant's remarks describing these elements have been fully considered, but they are not persuasive, and therefore, the Examiner has made this Office Action final.

5

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE  
10 MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37  
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,  
15 however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ahshik Kim whose telephone number is (571)272-2393. The examiner can normally be reached between the hours of 6:00AM to 3:00PM Monday thru  
20 Friday. The fax number directly to the Examiner is (571)273-2393.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (571)272-2398. The fax phone number for this Group is (703)872-9306.

Communications via Internet e-mail regarding this application, other than those under 35  
25 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [ahshik.kim@uspto.gov].

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*All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.*

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

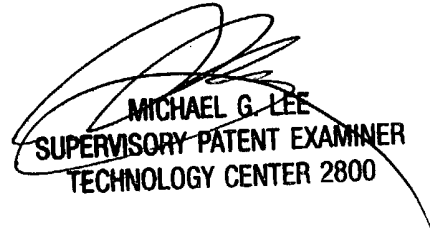
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Ahshik Kim  
Patent Examiner  
Art Unit 2876

15

January 21, 2004



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